

## PROFORMA FOR ENVIRONMENTAL APPRAISAL OF MINING PROJECTS (MINING SECTOR PROJECTS)

- Note 1 : All information to be given in the form of Annex/s should be properly numbered and form part of reply to this proforma.
- Note 2 : Please enter ✓ in appropriate box where answer is Yes / No
- Note 3 : No abbreviation to be used - **Not available** or **Not applicable** should be clearly mentioned.
- Note 4 : **Core zone** is the mining lease area.  
**Buffer zone** in case of ML area up to 25 ha. is to be considered as **5 km** all around the periphery of the core zone and for ML area above 25 ha. an area **10 km** all around the periphery of the core zone.
- Note 5 : Adopt **Scoping process** in carrying out EIA study.
- Note 6 : Please indicate source of data.

### 1. General Information

- (a) Name of the project : *Vijay West Underground Project*
- (i) Name of the proponent : *South Eastern Coalfields Limited*  
Mailing address : *Office of the Director Technical  
(Project & Planning)*  
E-mail : *tppsecl@sancharnet.in.dtp@seclhq.com*  
Telephone : *07752 – 241927, 241905*
- (b) Objective of the project : *Supply of coal to miscellaneous Consumers*

(c) Location of mine (s)

Village(s)	Tehsil	District	State
<i>Kendai</i>	<i>Passan</i>	<i>Bilaspur</i>	<i>Chattisgarh</i>

(d) Does the proposal relate to

- |       |                                 |     |                                     |    |                                     |
|-------|---------------------------------|-----|-------------------------------------|----|-------------------------------------|
| (i)   | New mine                        | Yes | <input checked="" type="checkbox"/> | No | <input type="checkbox"/>            |
| (ii)  | Expansion                       | Yes | <input type="checkbox"/>            | No | <input checked="" type="checkbox"/> |
|       | • Increase in ML area           | Yes | <input type="checkbox"/>            | No | <input type="checkbox"/>            |
|       | • Increase in annual production | Yes | <input type="checkbox"/>            | No | <input type="checkbox"/>            |
| (iii) | Renewal of ML                   | Yes | <input type="checkbox"/>            | No | <input checked="" type="checkbox"/> |
| (iv)  | Modernisation                   | Yes | <input type="checkbox"/>            | No | <input checked="" type="checkbox"/> |

(e) Site Information

(i) Geographical Location

• Latitude	22°50'28"-22°53'45"
• Longitude	82°17'19"-82°20'43"
• Survey of India Topo sheet number	64J/5
• Elevation above Mean Sea Level	475.87 m -512.66 m
• Total mining lease area (in ha.)	438.10

(ii) Dominant nature of terrain

• Flat	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
• Undulated	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
• Hilly	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>

**2. Land usage of the mining lease area (in ha.)**

(a) Agricultural	--
(b) Forest	360.66 Ha
(c) Waste land	--
(d) Grazing	--
(e) Surface water bodies	--
Others (Specify) <b>Tenancy</b>	114.608 Ha
<b>Total</b>	475.268 Ha

**3. Indicate the seismic zone in which ML area falls. In case of zone IV & V, details of earth quakes in last 10 years.**

(a) Severity (Richter Scale)

(b) Impact i.e. Damage to

• Life	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
• Property	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
• Existing mine	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>



**5. Township (outside mining lease)**

(a) Total area (in ha)	13.10
(b) No. of dwelling units	384
(c) Distance from mine site	17.00 Km approx.

**6. Distance of water bodies (in km)**

Distance from	River Bank *	Other Water bodies * Sea / creek / lake / nalla etc. (specify)
Mining lease boundary	<i>Hasdeo River – 3km Bamni &amp; Teti Nadi-1 km</i>	-
Ancillary facilities	<i>Hasdeo River – 7km Bamni &amp; Teti Nadi- 1 Km</i>	-

[\* From highest flood line / high tide line]

**7. For projects falling within the Coastal Regulation Zone (CRZ) : Not applicable**

Whether the mineral to be mined is of rare nature and not available outside CRZ?

Yes  No

if yes, annex a scaled location map showing low tide line (LTL), high tide line (HTL) duly demarcated by one of the authorized agencies\* [ \*Director, Space Application Centre, Ahmedabad: Centre for Earth Sciences Studies, Thiruvananthapuram: Institute of Remote Sensing, Anna University, Chennai: Institute of Wetland Management & Ecological Designs, Kolkata: Naval Hydrographers's Office, Dehradun: National Institute of Oceanography, Panjim, Goa: and National Institute of Ocean Technology, Chennai], boundary of mining lease area, distance of ML area from LTL and HTL CRZ boundary and CRZ classification of the project area as per the approved Coastal Zone Management Plan, and settlements, sand dunes, mangroves, forest land/patches, turtles breeding and nesting sites etc., if any, in the project area.

**8. Indicate aerial distance from the periphery of core zone / area from the periphery of the buffer zone to the boundary of following (up to 10 km):**

S. No.	Areas	Name	Aerial distance from (in km.)	
			Core zone*	Buffer Zone*
1.	National Park / Sanctuary	-	-	
2.	Biosphere Reserve / Tiger Reserve / Elephant Reserve / any other Reserve	-	-	
3.	Forest (RF / PF / unclassified)	<i>Arsara Reserve Forest</i>	<i>1.50 km</i>	
4.	Habitat for migratory birds	-	-	
5.	Corridor for animals of schedule I & II of the Wildlife (Protection) Act, 1972			
6.	Archaeological sites * Notified * Others	-	-	
7.	Defence Installation	-	-	
8.	Industries / Thermal Power Plants	-	-	-
9.	Other Mines	<i>Rani Atari</i>	<i>3.00</i>	-
10.	Airport	<i>Nil</i>	--	
11.	Railway Lines	<i>Pendra Road on Bilaspur Katni line (SE Railway)</i>	--	<i>63 Kms</i>
12.	National / State Highways	<i>Bilaspur-Chirimiri State Highway</i>		<i>23 Kms</i>

[\* Buffer zone in case of ML area up to 25 ha. is to be considered as **5 km** all around the periphery of the core zone and for ML area above 25 ha. an area **10 km** all around the periphery of the core zone].

**9. Description of flora & fauna separately in the core and buffer zones.\***

[\* Consult the Wildlife (Protection) Act, 1972 as amended subsequently and list species with (1) Common name (2) Scientific name and (3) under which schedule of the Wildlife (Protection) Act the identified species fall. Get the list authenticated by an Expert in the field / credible scientific institute / University / Chief Wildlife Warden office. **Information to be based on field survey.**]

<b>A. Flora</b>	<b>Core Zone</b>	<b>Buffer Zone</b>
1. Agricultural crops		<i>Kharif, Rabi, etc.</i>
2. Commercial crops		<i>Sugar cane, Ground nut, etc.</i>
3. Plantation		<i>Existing</i>
4. Natural vegetation / forest type		<i>Type III &amp; IV</i>
5. Grass lands		<i>Barbhusi, Kans, etc.</i>
6. Endangered species		<i>None</i>
7. Endemic species		<i>Sal, Saja, Arjun, Bahera, etc.</i>
8. Others (Specify)		
<b>B. Fauna</b>		
1. Total listing of faunal elements		<i>Given as in Annexure-XII of Vol. II</i>
2. Endangered species		<i>Hyaena, Jackal, Hare, etc.</i>
3. Endemic species		<i>None</i>
4. Migratory species		<i>None.</i>
5. Details of aquatic fauna, if applicable		<i>Fishes, Water snakes, etc.</i>

**10. Details of mineral reserves (as per approved Mining Plan)**

Quantity (in million tonnes)

- (a) Proved 58.858
- (b) Indicated --
- (c) Inferred --
- (d) Mineable reserves 11.086

**11. Major geological formation / disturbances in the mining lease area**

- (a) Geological maps submitted      Yes       No
- (b) Geological sections submitted      Yes       No
- (c) Contour map submitted      Yes       No



**13. Type and method of mining operations**

TYPE		METHOD	
Opencast	<input type="checkbox"/>	Manual	<input type="checkbox"/>
Underground	<input checked="" type="checkbox"/>	Semi-mechanised	<input type="checkbox"/>
Both	<input type="checkbox"/>	Mechanised	<input checked="" type="checkbox"/>

**14. Details of ancillary operations for mineral processing**

(a) Existing

Nil

(b) Additional

*Small Coal Handling Plant and a unit Workshop*

**15. Mine details**

(a) Opencast mine : *Not Applicable*

(i) Stripping ratio (mineral in tonnes to over burden in m<sup>3</sup>)

(ii) Ultimate working depth (in m bgl)

(iii) Indicate present working depth in case of existing mine (in m bgl)

(iv) Thickness of top soil (in m.)

- Minimum
- Maximum
- Average

(v) Thickness of overburden (in m.)

- Minimum
- Maximum
- Average

(vi) Mining Plan

- Height and width of the bench in overburden / waste.



- Height & width of the bench in ore body / coal seam.
- Proposed inclination / slope of the sides of the opencast mine (separately for overburden, coal / ore and overall slope of the pit sides) both while operating the mine as well as at the time of closure of the mine.
- Whether transverse sections across the opencast mine at the end of fifth year and at the end of the life of the mine have been submitted? Yes  No

(vii) Type of blasting, if any, to be adopted.

(b) Underground mine

(i) Seam / Ore body    Min.Depth (m)    Max. Depth (m)    Avg. thickness (m)

**23.50**                      **131.60**                      **1.48-5.76**

Rate of dip  
in degree

Direction of dip

**2 to 4 deg**

**South-Easterly**

(ii) Mode of entry into the mine

- Shaft
- Adit
- Incline

(iii) Details of machinery

• On surface	<b>CHP, Coal Hauler</b>
• At Face	<b>Continuous Miner, SDL</b>
• For transportation	<b>Conveyor Belt from U/G to Surface. After CHP, truck loading</b>
• Others	--

(iv) Method of stoping (metalliferrous mines) : **Not Applicable**

- Open
- Filled
- Shrinkage
- Caving
- Combination of above
- Others (Specify)

(v) Extraction method

- Caving
- Stowing
- Partial extraction

(vi) Subsidence

- Predicted max. subsidence (in m) *(after 25 years of mining)*
- Max. value of tensile strain (in mm/m)
- Max. slope change (in mm/m)
- Whether identified possible subsidence area(s) superimposed on Surface Plan has been submitted? Yes  No

• Major impacts on surface features like natural drainage pattern, houses, buildings, water bodies, roads, forest, etc. : *Details are in Chapter v & VI*

• Salient features of subsidence management (monitoring and control) :

Considering the impact of subsidence, following steps are required to minimize any adverse effects.

(1) To limit the tensile strain within 20 mm/m in the forest area, it is to restrict the thickness of extraction in most of the panels of seam III and in some of the panels of seam II (Top), with a lapse of about 5 years between extraction of successive panels in superimposition for allowing the strata to settle. And, in case of not restricting the thickness of extraction, manual depillaring or partial extraction or development as a final operation may be planned.

(2) With mitigative measures as suggested above, the forest except a limited number of trees' falling on edge of subsidence trough or tilting & dislodging may not be considerably affected by subsidence.

(3) Surface cracks likely to occur over the mining area due to subsidence need to be filled up properly and regularly by clay and stone chips and thereafter with a 0.3m high clay heap over the cracks.

(4) Surface drains should be made outside the subsidence area to prevent the surface water of adjoining area coming into active subsidence area.

(5) Coal pillars are to be left un-extracted vertically below and within the subsidence influence area such as villages, roads, nallas, etc.

(6) Crop compensation is to be paid to the tenancy land owners and subsequent reclamation by filling and consolidation of the land affected due to subsidence.

(7) Mine management would form a team that will be responsible for the proper and regular filling of surface cracks formed due to subsidence

**16. Surface drainage pattern at mine site**

(a) Whether the pre-mining surface drainage plan submitted? Yes  No

(b) Do you propose any modification / diversion in the existing natural drainage pattern at any stage? If yes, when. Provide location map indicating contours, dimensions of water body to be diverted, direction of flow of water and proposed route / changes, if any i.e. realignment of river / nallah / any other water body falling within core zone and its impact. Yes  No

**17. Embankment and / or weir construction**

(a) Do you propose, at any stage, construction of

(i) Embankment for protection against flood? Yes  No

(ii) Weir for water storage for the mine? Yes  No

(b) If so, provide details thereof. **Not applicable**

(c) Impact of embankment on HFL and settlement around. **Not applicable**

(d) Impact of weir on down stream users of water. **Not applicable**

**18. Vehicular traffic density (outside the ML area)**

	Type of vehicles	No. of vehicles per day
(a) Existing	-	-

(b) After the proposed activity	<b>LMV &amp; Coal trucks</b>	<b>Approx. 175</b>
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(c) Whether the existing road network is adequate?  
If no, provide details of alternative proposal? Yes  No

**19. Loading, transportation and unloading of mineral and waste rocks on surface:**

(a) Manual	Yes <input type="checkbox"/>	No <input type="checkbox"/>
(b) Tubs, mine cars, etc.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
(c) Scraper, shovels, dumpers / trucks.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
(d) Conveyors (belt, chain, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
(e) Others (specify).	NIL	

**20. Mineral(s) transportation outside the ML area**

	Qty. (in TPD)	Percentage (%)	Length (in km)
(a) Road	1700	100%	
(b) Rail			
(c) Conveyors			
(d) Rope way			
(e) Water ways			
(f) Pipeline			
(g) Others (Specify)			
Total	1700	100%	

**21. Baseline Meteorological and Air Quality data**

**(a) Micro-meteorological data**

[Continuous monitoring for all four seasons]

- (i) Wind rose pattern (16 points of compass i.e. N, NNE, NE, ---) based on 24-hourly data. For coastal area also furnish day-time and night time data.
  - Day time - 8:30 hrs
  - Night time – 17:30 hrs
  - 24 – hours period
  - (ii) Site specific monitored data

Month	Wind Speed (kmph)			Temperature (°C)			Relative Humidity (%)			Rain Fall <sup>§</sup> (mm)			Cloud Cover <sup>@</sup> a) Mean
	Min.	Max.	% of Calm	Mean (Dry Bulb)	Highest	Lowest	Mean	Highest	Lowest	Total	24 hrs Highest	No. of Rainy Days	
<b>Dec,02 to Jan,03 (One Month)</b>	<b>&lt;1.0</b>	<b>9.2</b>	<b>53.20</b>	<b>17.6</b>	<b>31</b>	<b>7</b>	<b>64.7</b>	<b>94</b>	<b>31</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0.88</b>

<sup>§</sup> 24 hrs rainfall should be reported from 08:30 hrs IST of previous day to 08:30 hrs IST of the day.

<sup>§</sup> Rainy day is considered when 24 hrs rainfall is ≥ 2.5 mm.

<sup>@</sup> Visual observations of cloud cover should be recorded four times a day at regular intervals.

- (iii) Indicate name and distance of the nearest IMD meteorological station from which climatological data have been obtained for reporting in the EIA report, if any. *IMD, Pendra located a distance of 30 km from the project.*

**(b) Ambient air quality data\* (RPM, SPM, SO<sub>2</sub>, and NO<sub>x</sub>)**

(i) Season and period for which monitoring has been carried out (Feb to Dec 2002).

(ii) No. of samples collected at each monitoring station : 22

Name of monitoring equipment used			SPM			RPM			SO <sub>2</sub>			No <sub>x</sub>			Pb**		
			RDS			RDS			RDS			RDS			--		
Equipment sensitivity			<1.0			<1.0			<1.0			<1.0			--		
Permissible AAQ standard (CPCB) <b>R I S</b>			200			60			80			80			--		
			500			150			120			120			--		
			100			75			30			30			--		
Monitoring Location	No. of Samples Drawn	Category* (R, I, S)	Min	Max	95 % tile	Min	Max	95 % tile	Min	Max	95 % tile	Min	Max	95 % tile	Min	Max	95 % tile
<b>Core zone</b> DA <sub>1</sub>	RPM/ SPM- 80, Sox/ Nox- 240	I	66	86	84	16	22	21	9	15	14	11	17	17			
<b>Buffer Zone</b> DA <sub>2</sub>		R	69	90	88	17	23	23	7	13	12	9	9	15			
DA <sub>3</sub>		R	65	85	83	15	22	21	7	14	13	11	17	16			
DA <sub>4</sub>		R	66	85	83	16	21	20	8	14	13	10	17	16			
DA <sub>5</sub>		R	66	87	85	16	21	20	7	13	13	9	17	17			

\*R = Residential; I = Industrial; S = Sensitive

\*\*Pb for mineral specific sites only.

# Annex a location map indicating location of AAQ stations, their direction and distance with respect to project site.

Note : 95 %tile has been calculated based on season wise (avg.) data

**22. Stack and emission details , if any\*** : Not Applicable

Sl. No.	Process / unit of operation (e.g. DG Set, Boiler)	Height Of stack (m)	Intern al top dia. (m)	Flue gas exit velocity (m/sec)	Emission rate (kg/hr)				Heat emission rate from top of stack (K.cal/hr)	Exhaust / Flue gas			
					SPM	SO <sub>2</sub>	NO <sub>x</sub>	CO		Temp °C	Density	Speci fic Heat	Volume tric flow rate (m <sup>3</sup> /hr.)

**23. Details of fugitive emissions during mining operations\*** : *Not Applicable*

**24. Air Quality Impact Prediction (AQIP)\***

- (a) Details of model(s) used for AQIP including grid size, terrain features, and input meteorological data : *No prediction model has been used*
- (b) Maximum incremental GLC values of pollutants based on prediction exercise : *Not Applicable*

Sl. No.	Pollutants	Incremental Value	(in µg/m <sup>3</sup> )	
			Ambient Air Quality	Resultant Air Quality
1.	SPM	<b><i>Marginal</i></b>	<b><i>90 @g / cum</i></b>	<b><i>Within permissible limit</i></b>
2**.	SO <sub>2</sub>	<b><i>Marginal</i></b>	<b><i>14 @g / cum</i></b>	<b><i>Within permissible limit</i></b>
3**.	NO <sub>x</sub>	<b><i>Marginal</i></b>	<b><i>17 @g / cum</i></b>	<b><i>Within permissible limit</i></b>

[\* Question Number 22, 23 & 24 need not be filled-in for mines having ML area of **25 ha. or less.**]

[\*\*Information on item no. 2 & 3 to be provided in cases with captive power generation of 500 KVA and above]

**25. Water requirement (m<sup>3</sup>/day)**

<b>Purpose</b>	<b>Avg. Demand</b>	<b>Peak Demand</b>
<b>A. <u>Mine site</u></b>		
1. Mine operation	<b>214</b>	
2. Land reclamation	<b>Nil</b>	
3. Dust suppression	<b>94</b>	
4. Drinking	<b>45</b>	
5. Green Belt	<b>40</b>	
6. Beneficiation (CHP)	<b>30</b>	
7. Washeries	<b>Nil</b>	
8. Fire Service	<b>20</b>	
9. Others (specify)		
<b>B. <u>Township</u></b>		
1. Green Belt	<b>20</b>	
2. Domestic	<b>286</b>	
3. Other (specify) – Road watering	<b>Nil</b>	
<b>Total</b>	<b>749</b>	

**26. Source of water supply\***

<b>S. No.</b>	<b>Source</b>	<b>m<sup>3</sup>/day</b>
1	River (name) :	
2	Ground water (Tubewell)	<b>545</b>
3	Mine water (sump / pit)	<b>204</b>
4	Other surface water bodies (specify)	-

[\*Annex a copy of sanction letter / permission from the concerned authority (Central Ground Water Authority in case of ground water abstraction is from notified area / State Ground Water Board in case of non-notified area / State Irrigation Department for surface water pumping) for drawing water.]



**27. Lean season flow in case of pumping from river / nalla (cumecs)** **NA**  
- Brahmani River

**28. Ground water potential of the study area**

**28.1. Ground water availability**

(a)	Range of water table (m bgl)	
(i)	Pre-monsoon (April/May)	
	• Core Zone ( <i>Korbi village</i> )	8.05-10.81
	• Buffer zone ( <i>Pasan village</i> )	5.66-11.00
(ii)	Post-monsoon (November)	
	• Core Zone ( <i>Korbi village</i> )	0.46-6.50
	• Buffer zone ( <i>Pasan village</i> )	3.25-8.62
(b)	Total annual replenishable recharge (million m <sup>3</sup> / year)	
	• By ground water table fluctuation method	38.78
	• By rainfall infiltration factor method	44.39
(c)	Annual draft excluding estimated draft through mine discharge (million m <sup>3</sup> / year)	3.30
(d)	Estimated draft through mine discharge (million m <sup>3</sup> / year)	2.59
(e)	Net annual ground water availability (million m <sup>3</sup> / year)	38.50
(f)	Stage of ground water development in %(Pondi Dev. Block)	0.66 %

**28.2. Water demand - Competing users of the water source**

S. No.	Usage	Present Consumption (m <sup>3</sup> /day)		Additional proposed as per local plan (m <sup>3</sup> /day)		Total (m <sup>3</sup> /day)	
		Surface	Ground	Surface	Ground	Surface	Ground
1	Domestic	<i>Nil</i>	3704	<i>Nil</i>	2461	<i>Nil</i>	6165
2	Irrigation	<i>Nil</i>	<i>Nil</i>	<i>Nil</i>	576	<i>Nil</i>	576
3	Industry	<i>Nil</i>	<i>Nil</i>	<i>Nil</i>	<i>Nil</i>	<i>Nil</i>	<i>Nil</i>
4	Mining	<i>Nil</i>	2894-	<i>Nil</i>	6503	<i>Nil</i>	9397
5	Others (specify)	<i>Nil</i>	<i>Nil</i>	<i>Nil</i>	<i>Nil</i>	<i>Nil</i>	<i>Nil</i>
<b>Total</b>		<b><i>Nil</i></b>	<b>6598</b>	<b><i>Nil</i></b>	<b>9540</b>	<b><i>Nil</i></b>	<b>16138</b>

**29. Water quality\***

- (a) Annex physico -chemical analysis of water at intake point **\*\* -Annexed as Annexure- IX of EIA vol II**
- (b) In case of existing mine, annex report on quality of water discharge i.e. complete physico - chemical analysis\*\*

[\*For non-discharging mines at least four ground water samples to be taken preferably from downstream direction of the mine in pre-monsoon and post-monsoon periods and analysed. For discharging mines six samples are to be analysed]

\*\*All parameters as per BIS 10500. Indicate name of Methodology, Equipment used for analysis, and Detection Level (DL) for each parameter.

\*\*\* Wherever any analytical parameter is below detection level, "BDL" (Below Detection Level) should be written instead of 'NIL'.

**30. Impact on ground water regime / stream / lake / springs due to mine dewatering \***

- (a) Radius of influence (in m) #

115 to 515

#Due to existing and operating mines in the area, radius of influence is stabilized and minimum.

[To be estimated based on analysis of pumping test data and application of empirical formula]

- (b) Whether saline water ingress will take place? (applicable to coastal areas)

Yes

No

- (c) Impact on stream / lake / springs :

**[\* Provide a comprehensive hydro-geological assessment report** if the average mine dewatering is more than 100 m<sup>3</sup>/day and or going below water table in non-monsoon period. The report should be based on preferably latest one year pre-monsoon and post-monsoon baseline data covering information on ground water situation, aquifer characteristics, water level conditions (April – May and November), estimate of ground water resources, predicted impact of the project on ground water regime and detailed remedial / conservation measures such as artificial recharge of ground water etc. The report should be based on actual field inventory out of existing wells, at least 30 observation wells in the buffer zone with supplementary information from secondary sources (mention name). For estimation\*\* of ground water resource (refer question no. 28 above) be designated study area of the buffer zone may be sub-divided into command and non-command areas, watershed-wise (in case of hard rock / consolidated formations) / block-wise / mandal-wise in case of alluvial / unconsolidated formations]

[\*\*For estimating ground water resources in the area follow the Ground Water Estimation Committee recommendations of 1997]

**31. Waste Water Management****Mine**(a) Daily average discharge (m<sup>3</sup>/day) from different sources

(i) Mine water discharge during

• Lean period

1652

• Monsoon period

18170

(ii) Workshop

Nil

(iii) Domestic (mine site)

36

(iv) Beneficiation / Washeries

Nil

(v) Coal Handling Plant

24

(vi) Tailings pond

--

(vii) Others (Specify) *Continuous miner*

171

Total (Lean season)

1883

Total (Rainy season)

(b) (i) Waste water treatment plant; flow sheet for treatment process attached.

Yes

No

***(i) Mine water discharge --> Settling Tank --> After industrial, green belt and dust suppression use by the mine --> Balance discharge into local drainage***

***(ii) Industrial use --> Oil & grease trap --> Sedimentation tank --> Reuse in industries.***

***(iii) Domestic --> Septic Tank***

(c) Quantity of water recycled / reused / to be recycled in

(i) Percentage

10.83 %

(ii) m<sup>3</sup> /day : Mine use204 m<sup>3</sup> /day

(d) Point of final discharge

<b>Final Point</b>	<b>Quantity discharged (in m<sup>3</sup>/day)</b>
1. Surface	
(i) Agricultural land	<b>1679</b>
(ii) Waste land	<b>Nil</b>
(iii) Forest land	<b>Nil</b>
(iv) Green belt	<b>Nil</b>
2. River / nallah	<b>Nil</b>
3. Lake	<b>Nil</b>
4. Sea	<b>Nil</b>
5. Others (specify)	<b>Nil</b>
<b>Total</b>	<b>1679 m<sup>3</sup> /day</b>

(e) Users of discharge water

- (i) Human                      Yes                       No
- (ii) Livestock                      Yes                       No
- (iii) Irrigation                      Yes                       No
- (iv) Industry                      Yes                       No
- (v) Others (specify)

(f) Details of the river / nalla, if final effluent is / will be discharged (cumecs)

- (i) Average flow rate
- (ii) Lean season flow rate
- (iii) Aquatic life                      :
- (iv) Analysis of river water 100 meters upstream and 100 meters downstream of discharge point submitted.                      Yes                       No

**Township**

- (a) Waste water generation from township ( $m^3/day$ )
- (b) Are you planning to provide sewage treatment plant? Yes  No
- (c) Usage of treated water

**32. Attach water balance statement in the form of a flow diagram indicating source (s), consumption (Section-wise) and output:-Attached**

**33. Ambient noise level  $leq$  dB(A)**

Location of sampling station	Noise level					
	Day Time			Night Time		
	Max	Min	Avg	Max	Min	Avg
<b>A. Core Zone</b>						
DN <sub>1</sub> (Kendai Village)	<b>46.10</b>	<b>43.2</b>	<b>44.65</b>	<b>40.8</b>	<b>38.1</b>	<b>39.45</b>
<b>B. Buffer Zone</b>						
DN <sub>2</sub> (Putipakhna Village)	<b>44.90</b>	<b>41.30</b>	<b>43.10</b>	<b>39.80</b>	<b>36.90</b>	<b>38.50</b>
DN <sub>3</sub> (Bardapakhna Village)	<b>44.60</b>	<b>41.80</b>	<b>43.20</b>	<b>38.10</b>	<b>36.00</b>	<b>37.05</b>
DN <sub>4</sub> (Baskatiya Village)	<b>44.90</b>	<b>42.30</b>	<b>43.60</b>	<b>40.60</b>	<b>37.10</b>	<b>38.85</b>
DN <sub>5</sub> (Chhaparpara village)	<b>44.30</b>	<b>41.10</b>	<b>44.20</b>	<b>40.60</b>	<b>38.10</b>	<b>39.35</b>

**34. Solid Waste**

- (a) Top soil and Solid waste quantity and quality-*Not applicable*

Name (Lump/fines/slurry/Sludge/others)	Composition	Quantity ( $m^3/month$ )	Method of disposal
Mining activity*			
a. Top Soil b. Over burden# c. Others (specify)	<i>Silt, Clay &amp; Shale</i>	<i>Negligible</i>	<i>Ramp filling</i>
Effluent Treatment Plant (sludge)	<b>Not applicable</b>		
Total			

[\* Annex layout plan indicating the dump sites.]

- (b) (i) Does waste (s) contain any hazardous/toxic substance/ radioactive materials or heavy metals? Yes  No
- (ii) If yes, whether details and precautionary measures provided? : **Not applicable**  
Yes  No
- (c) Recovery and recycling possibilities. : **Not applicable**
- (d) Possible user(s) of the solid waste. : **Ramp making, leveling, etc. for civil construction works**
- (e) (i) Is the solid waste suitable for backfilling? Yes  No
- (ii) If yes, when do you propose to start backfilling. 

**Not applicable as it being UGP**

(in million m<sup>3</sup>)

Solid waste (s)	Already accumulated (A)	To be generated (B)	% of A & B to be backfilled	
			A	B
Over burden*	NIL	NIL	NIL	NIL
Others (specify)				

\* As it is an underground project, overburden will be generated during development period only

**Land reclamation Plan**

- (f) In case waste is to be dumped on the ground, indicate : **Not applicable**
- (i) Associated environmental problems
- (ii) Number & type of waste dumps
- No. of external dumps
  - Max. projected height of dumps (in m)
  - No. of terraces and height of each stage
  - Overall slope of the dump (degree)
  - Proposed reclamation measures
- (iii) Section of the waste dump in relation to the adjacent ground profile attached. Yes  No

**35. Fuel / Energy requirements\***

[\*To be furnished for mines having ML area more than 25 ha. or captive power generation of 500KVA and above]

(a) Total power requirement (in MKWH/annum)

S. No.		Mine Site	Township	Others (specify)	Total
1	Present	--	--	--	--
2	Proposed / additional				2.335 kVA
Total					

(b) Source of power : (in MKWH/annum)

S. No.		SEB/Grid*	Captive power plant	DG Sets
1	Present		-	-
2	Proposed	Kotmi Substation of MPEB-	-	-
Total				

[\* Annex a copy of the sanction letter from the concerned authority]

(c) Details of fuels : Not applicable

S.No.	Fuel	Daily Consumption (TPD)		Calorific value (Kcals/kg)	% Ash	% Sulphur
		Existing	Proposed			
1	HSD	--	<b>0.365</b>	<b>Not available</b>		
2	LSHS	--				
3	Other (specify)	--				

**36. Storage of inflammable / explosive materials**

S. No.	Name	Number of Storages	Consumption (in TPD)	Maximum Quantity at any point of time
1	Fuels	N/A	N/A	N/A
2	Explosives	N/A	N/A	N/A

**37. Human Settlement-As per Census 1991 Data**

	Core Zone	Buffer Zone
Population*	2000	30036
No. of villages	3	47
Number of households village-wise	425	5460

[\* As per 2001 census record or actual survey]

- 38. Rehabilitation & Resettlement (R&R) Plan\* :** Not applicable  
 [\*Provide a comprehensive rehabilitation plan, if more than 1000 people are likely to be displaced, other-wise a summary plan]

- (a) Villages falling within the study area

	Villages	
	Number	Name
Core zone	1	Kendai and Skhbahara, a Muhalla of Biadjadand
500 m from the blasting site (s)		Nil
Buffer zone	48	
Township site		Near proposed Rani Atari Project Colony

- (b) Details of village(s) in the core zone

S. No.	Village name	Population*		Average Annual Income
		Tribal	Others	
1	Kendai	73.35%	24.65%	< Rs.12000

[\*As per 2001 census / actual survey]

- (c) Population to be displaced and / or Land oustees Nil

Name of village(s) falling within	Number of oustees		
	Land (only)	Homestead (only)	Land and Homestead (both)
<u>Mining Lease</u>			
1.			
2.	NIL		
<u>Township Site</u>			
1.			
2.	NIL		

- (d) Whether R&R package has been finalised? *Not applicable as no family will be displaced.*

If yes, salient features of R&R plan for oustees.

- (i) Site details where the people are proposed to be resettled & facilities existing / to be created.
- (ii) Funds earmarked for compensation package.



- (iii) Agency /Authority responsible for their resettlement.
- (iv) Time of commencement of resettlement of Project Affected People (PAP).
- (v) Period by which resettlement of PAP will be over.

**39. Lease -wise plantation details**

(a)	Lease area (in ha.)	<u>Existing mine</u>	<u>New mine</u>
(i)	Area broken up	<input type="text"/>	<input type="text" value="Nil"/>
(ii)	To be broken up	<input type="text"/>	<input type="text" value="9.00"/>
(iii)	Area not to be broken-up	<input type="text"/>	<input type="text" value="466.268"/>
(b)	Township area (in ha.)	<input type="text"/>	<input type="text" value="13.10"/>
(c)	Area afforested and proposed (in ha.)	:	

		Peripheral	Dumps	Roads	Township	Others
(i)	Existing	--	--	--	--	--
(ii)	Proposed		--	0.50	1.00	

(d) No. and type of trees planted and proposed

(i) Existing : *Not applicable*  
 • When plantation was started? Month / Year

No.of plant species planted	Number saplings (per ha.)

Survival rate %  • Avg. height

(ii) Proposed:

No. of plant species to be planted	Number of saplings (per ha.)
19000	<i>This includes 15400 saplings @ 200 per Ha. of subsided area and 4600 saplings @ 2500 per Ha.</i>

**40. Environmental health and safety**

- (a) What major health and safety hazards are anticipated? *Adequate provision has been made to control spontaneous combustion of coal, mine inundation etc.*
- (b) What provisions have been made/proposed to be made to conform to health and safety requirements? *A periodical check-up in 5 years for every worker as per DGMS provision. 20% workers will be covered yearly.*
- (c) In case of an existing mine : *Not applicable*
- (i) Comprehensive report on health status of the workers as under the Mines Act annexed. Yes  No
- (ii) Mineralogical composition of RPM (dust)
- Free silica
  - Chromium\* (Total as well as Hexavalent)
  - Lead\*\*
- [\* Only for Chromite mines]  
[\*\*Only for Base Metal mines]
- (d) Information on radiation protection measures, if applicable. : *Not applicable*

**41. Environmental Management Plan**

Salient features of environmental protection measures

S. No.	Environmental issues*	Already practiced, if applicable	Proposed
1	Air pollution	--	<i>Adequate ventilation in underground. Water spraying in dust prone areas, plantation.</i>
2	Water pollution	--	<i>Sedimentation pond, O &amp; G trap, soak-pit etc., to be installed.</i>
3.	Water conservation	--	<i>Recycling of treated water.</i>
4.	Noise pollution	--	<i>Vibrating machines to be mounted on vibration absorbing pad, provision of ear muffs/plugs to workers and plantation.</i>
5.	Solid waste / Tailings	--	--

6.	Land degradation	--	<i>Degradation of the land will be minimum. If any surface cracks/voids created out of underground mining will be filled up regularly with clay and stone chips to achieve original drainage pattern of the area and to prevent ingress of air and water into the goaf.</i>
7.	Erosion & Sediment	--	<i>Sedimentation pond to be provided and waste water, generated occasionally (during monsoon) to be disposed of through pucca drains.</i>
8.	Top soil	--	<i>Not to be affected</i>
9.	Ground vibration	--	
10.	Wildlife conservation	--	<i>No forest land &amp; wild life habitat will be degraded by the project. Prevention of hunting of Schedule I &amp; II animals would be done with the help of local people &amp; Forest Deptt. , prevention forest fire etc.</i>
11.	Forest protection	--	<i>As above</i>
12.	Others (specify)	--	--

[\* As applicable]

**42. Compliance with environmental safeguards (For existing units) : *Not applicable***

- (a) Status of the compliance of conditions of environmental clearance issued by MoEF, if any, enclosed. Yes  No
- (b) Status of the compliance of 'Consent to Operate' issued by SPCB, if any, enclosed. Yes  No
- (c) Latest 'environmental statement' enclosed. Yes  No

**43. Scoping of EIA**

Whether environmental impact assessment of the project has been carried out by following scoping process?

Yes  No 

If yes, a copy of scoping of EIA annexed.

Yes  No

**44. Mine closure**

(a) Have you planned mine closure?

Yes  No 

(b) Submitted a conceptual mine closure plan.

Yes  No 

(c) If yes, indicate estimated amount for implementing the same (in Rs. lakhs)

**3.370****45. Capital cost of the project (in Rs. Lakh)  
(Based on latest estimate)****6356.328 lakhs****46. Cost of environmental protection measures \***

(in Rs. Lakh)

S. No.		Capital cost		Annual recurring cost	
		Existing	Proposed	Existing	Proposed
1	Pollution Control (Separately provide break-up) Anti pollution measures in i) Mining & Industrial area ii) Township		<b>111.184</b> <b>114.350</b>		
2	Pollution Monitoring (Separately provide break-up) i) EMP preparation ii) EMP Data generation iii) Peizometer Study iv) Flora & Fauna study v) 3 D subsidence study		<b>7.00</b> <b>5.00</b> <b>5.00</b> <b>0.50</b> <b>2.00</b>		<b>2.25(EMP monitoring Cost)</b>
3	Occupational Health Community Development in adjoining villages and other cost		<b>10.00</b>		
4	Green Belt • Mine   • Township)		<b>0.00</b> <b>0.00</b>		
5	Compensatory afforestation		<b>7.799</b>		
6	Others (specify) Subsidence management i) 3D Subsidence Study ii) Compensation against Tenancy land due to depillaring iii) ` Compensation against Tenancy land (for surface right land provision) iv) Restoration of land (Crack filling etc.)		<b>2.00</b> <b>12.128</b> <b>Nil</b> <b>25.00</b>		
<b>Total</b>			<b>255.036</b>		

**47. Amount earmarked for socio-economic welfare measures for the nearby villages other than R&R plans.** : *10.00 lakhs*

**48. Public Hearing**

(a) Date of Advertisement

(b) Newspapers in which the advertisement appeared

(c) Date of public hearing (DD/MM/YYYY)

(d) Public Hearing Panel chaired by & members present

(e) No. of people attended the public hearing meeting and number of people from the lease area.

(f) Summary/details of public hearing in tabular form.

Issues raised by the Public	Response/Commitment of Project Proponents	Suggestions made by the Public Hearing Panel

**49. Whether the following approvals\* (wherever applicable) have been obtained?**

(i) Site clearance from MoEF Yes  No

(ii) 'Consent for Establishment' from the State Pollution Control Board Yes  No

- |        |  |     |                          |    |                          |
|--------|--|-----|--------------------------|----|--------------------------|
| (iii)  | NOC from Atomic Mineral Division   | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (iv)   | Mining plan approval from IBM / Ministry of Coal   | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (v)    | In case of existing mines, mining scheme approval from IBM   | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (vi)   | Forestry clearance under FCA, 1980   | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (vii)  | NOC from Chief Controller of Explosives  | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (viii) | Commitment regarding availability / pumping of water from the concerned Authorities                | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (ix)   | In case of ML area falling in notified areas of the Central Ground Water Authority, NOC from them. | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |

[\* Annex copies of approvals and number them]

- 50. Was / is there any court case relating to the project or related activities? If so, provide details present status.**
- |     |                          |    |                                     |
|-----|--------------------------|----|-------------------------------------|
| Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
|-----|--------------------------|----|-------------------------------------|

**Verification:** The data and information given in this proforma are true to the best of my knowledge and belief.

Date:

Signature of the applicant\* with full name & address

Place:

[\* Owner or his authorized signatory]

Given under the seal of organisation on behalf of whom the applicant is signing